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# ‘Sticks and Stones may break these bones’: Experimental approaches to identifying the use of wooden hunting spears during the Middle Pleistocene and beyond

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## Résumé

The use of wooden spears as hunting weapons from the second half of the European Middle Pleistocene onwards is now well-accepted. Archaeological and ethnographic evidence supports their continued use into the Late Pleistocene through to recent hunter-gatherer societies. Examples of wooden spears are however rare, and are most famously known from the Middle Pleistocene sites of Clacton-on-Sea (MIS 11) and Schöningen (MIS 9), as well as the early Late Pleistocene site of Lehringen (MIS 5e). Partly as a result of their scarcity, experimental replication of their use is in its infancy, and therefore wound and terminal ballistics of such weapons are poorly understood. Proposed examples of hunting lesions resulting from the use of wooden spears are limited to the British Middle Pleistocene sites of Boxgrove (MIS 13) and Swanscombe (MIS 11), and confidence in whether damage to scapulae from these sites represents hunting lesions or not is hampered by a poor understanding of additional potential modifying agents. This paper presents experiments conducted at Cranfield Defence and Security’s ballistics ranges replicating the use of untipped wooden spears as thrusting and hand-thrown weapons on adult horse carcasses. The resulting bone damage is compared with damage from an actualistic study of hammerstone use on adult horse scapulae for marrow and grease access. A descriptive and quantitative analytical approach to experimentally-produced damage is compared with the Pleistocene archaeological examples, which provides an empirical basis for evaluating the curvilinear fractures on the Boxgrove and Swanscombe scapulae. Overall the experimental results outlined help explain the rarity of hunting lesions from a weapon that looks likely to have had a long period of use, aids in comparing the weapon with subsequent innovations, and lays a framework for future experimental work replicating the use of wooden spears.

**Mots-Clés:** Middle Pleistocene, ballistics, wooden spears, hunting, horses, hunting lesions

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